TECHNICAL MEMORANDUM

June 27, 2001

To: Mr. Stan Komperda, Project Manager
Illinois Environmental Protection Agency

From: Mr. Sasa Jazic, Project Engineer
Parsons Engineering Science, Inc.

Subject: Update of Fieldwork Activities
June 4 through June 26, 2001
Lockformer Facility
Lisle, Illinois

Parsons Engineering Science, Inc. (Parsons) has prepared the following memo to provide a summary of fieldwork activities completed from June 4 through June 26, 2001, at the Lockformer site in Lisle, Illinois. Parsons performed oversight for work conducted by Clayton Environmental Group, Inc. (Clayton) personnel during field activities. These activities included down-hole video taping of the open hole bedrock wells, conducting dual packer tests and ground water sampling from the deep monitoring wells screened within the underlying dolomitic bedrock. A second crew from Clayton was sampling from the shallow monitoring wells screened within the overlying till. Additionally, on June 26, 2001 Clayton collected sediment samples from on-site manholes and catch basins. Mr. Drew McGowan, Ms. Karen Carlisle and Mr. Chris Athanassopoulos of Parsons were assigned to perform oversight during this period of field activity. The following sections provide a synopsis of activities completed during this stage of the fieldwork for this project. Select photographs are included as Attachment A.

Down-hole Video

On June 4 through June 5, 2001, Layne Western Technical Services, using a down-hole camera, recorded a continuous visual log of the interior wall of the well casing and bedrock borehole section of each deep monitoring well. The visual log from each of the bedrock monitoring wells was recorded on a VHS videocassette. Clayton personnel were present throughout the down-hole camera investigation. Clayton took the VHS well log cassettes for further analysis to determine the locations, and extent of fractures within the bedrock section of each deep well. The results of Clayton's analysis were used to determine the ideal placement of the packer apparatus for packer testing and sample collection.

Packer Testing and Groundwater Sampling

On June 11 through June 26, 2001, Clayton conducted dual packer testing at all newly installed bedrock monitoring wells. (MW-1100D through MW-1107D). An eight channel Hermit 3000 data logger with four pressure transducers was used to record changes in static water level above and below the packer assembly as well as in nearby bedrock wells, with the exception of MW-1106D and MW-1107D. The water levels in adjacent wells were not recorded

during the tests in these wells since there were no bedrock wells located in close proximity. In monitoring wells MW-1106D and MW-1107D transducers were only placed above and below the inflated packers. The packer placement was specific to each test based on Clayton's analysis of the down hole video logs collected during the previous field investigation. Table 1 shows the interval for each packer test and total volume removed before sampling.

Before the data logger was started, Clayton manually raised the transducers a measured height in the monitoring wells to verify the data logger was operating correctly. The data logger was started before the submersible purge pump was activated to ensure any changes in water level related to purging would be recorded. Packer tests conducted on monitoring wells (MW-1102D and the first three packer test intervals in MW-1103D) utilized a submersible pump that removed approximately 4 gallons per minute. The remaining monitoring wells (MW-1100D, MW-1101D, MW-11103D, MW-1104 through MW-1107D used a submersible pump that removed 12-14 gallons per minute. Clayton collected samples after temperature, pH and conductivity readings stabilized. The samples were collected using a bladder pump. Clayton collected a water sample for VOC analysis from each packer interval. Parsons collected a split from the deepest packer test interval in monitoring wells MW-1101D, MW-1102D and MW-1105D for VOC analysis

Shallow Groundwater Sampling

Clayton conducted shallow monitoring well sampling from June 5 through June 22, 2001. *All shallow groundwater monitoring wells were sampled for constituents of interest (COI):* VOC, Ethene/Ethane, Nitrate, Chemical Oxygen Demand (COD), Chlorides, Sulfate, Total Organic Carbon (TOC), Sulfide, Dissolved Metals (Manganese, Iron). These analytes were all listed in the May 25, 2001 work plan. Samples were collected after a minimum of 3 well volumes were purged or the well was purged dry and temperature, pH and conductivity readings stabilized. Table 2 lists the date and time of the shallow monitoring wells sampled during this investigation

Clayton followed the sampling procedures outlined in the *Comprehensive VOC Investigation Work Plan* dated May 25, 2001. Parsons collected split samples from MW-1102S, MW-500 and MW-521D for VOC analysis.

Sediment Sampling

On June 26, 2001 Clayton attempted to collect seven sediment samples from the manholes and catch basins on the western portion of the Lockformer property, see Figure 15 from the *Interim Investigation Report* dated January 25, 2001. Sediment was only observed in the far north manhole (MH-1), the catch basin due south (CB-1) of MH-1 and the manhole just south of the transformer on the eastern side of the parking lot (MH-3). Clayton submitted all samples for VOC analysis. Parsons collected a split sample from MH-3 for VOC analysis.

Future Activities

Parsons is continuing to provide oversight services on this project and will provide additional reports on the field activities at the site. The next scheduled fieldwork activities are scheduled to begin on July 9, 2001. The work scheduled is the installation of the off-site monitoring wells on the Northern Builder's property, west of Lockformer.

c: Stan Black/Illinois EPA
Howard Chinn/Illinois Attorney General
Marc Cummings/Illinois EPA
Donald Gimbel/Illinois EPA
Kendra Pohn/Illinois Attorney General
Steven Faryan/USEPA
File: 739542.01000

TABLE 1

SUMMARY OF PACKER TEST INFORMATION
LOCKFORMER SITE
LISLE, ILLINOIS

PACKER TEST	DATE	TEST INTERVAL [1]	VOLUME REMOVED [2]
MW-1100D-SPT-19	6/20/01	69 - 75'	309
MW-1101D-SPT-20	6/20/01	83 - 91'	333
MW-1101D-SPT-21	6/20/01	75 - 83'	332
MW-1101D-SPT-22	6/20/01	65.5 - 73.5'	330
MW-1102D-SPT-1	6/11/01	142.5 - 150.5'	318
MW-1102D-SPT-2	6/12/01	132.5 -140.2'	325
MW-1102D-SPT-3	6/12/01	123.5 - 131.5'	327
MW-1102D-SPT-4	6/13/01	113.5 - 121.5'	305
MW-1102D-SPT-5	6/13/01	105.5 - 113.5'	53 [3]
MW-1102D-SPT-6	6/13/01	97.5 - 105.5'	23 [3]
MW-1102D-SPT-7	6/14/01	91.5 - 99.5'	328
MW-1102D-SPT-8	6/14/01	83.0 - 91.0	317
MW-1102D-SPT-9	6/14/01	73 - 81'	40 [3]
MW-1103D-SPT-10	6/15/01	136.5 - 144.5'	307
MW-1103D-SPT-11	6/15/01	128.5 - 136.5'	309
MW-1103D-SPT-12	6/15/01	119 - 127'	307
MW-1103D-SPT-13	6/18/01	111 - 119'	67[3]
MW-1103D-SPT-14	6/19/01	103 - 111'	61[3]
MW-1103D-SPT-15	6/19/01	95 - 103'	51[3]
MW-1103D-SPT-16	6/19/01	84 - 92'	326
MW-1103D-SPT-17	6/19/01	78.5 - 86.5'	333
MW-1103D-SPT-18	6/19/01	73.5 - 81.5'	328
MW-1104D-SPT-23	6/21/01	86.5 - 94.5'	326
MW-1104D-SPT-24	6/21/01	79.5 - 87.5'	328
MW-1104D-SPT-25	6/21/01	73.5 - 81.5'	324
MW-1105D-SPT-26	6/22/01	90 - 98'	327
MW-1105D-SPT-27	6/22/01	88 - 96'	325
MW-1105D-SPT-28	6/22/01	80 - 88'	326
MW-1106D-SPT-29	6/25/01	104 - 112'	27[3]
MW-1106D-SPT-30	6/25/01	96 - 104'	310
MW-1106D-SPT-31	6/25/01	80 - 96'	17[3]
MW-1107D-SPT-32	6/26/01	95 - 103'	328
MW-1107D-SPT-33	6/26/01	88 - 96'	326
MW-1107D-SPT-34	6/26/01	81 - 89'	307

(1) Depth of packer interval from Top of Casing in feet.
(2) Volume removed recorded to nearest gallon.
(3) Clayton attempted to remove at least 300 gallons per packer interval.
These intervals pumped dry, were allowed to recharge and then sampled.

TABLE 2

MONITORING WELL SAMPLING DATA
LOCKFORMER SITE
LISLE, ILLINOIS

Well ID	Sample Date
MW-1103M	6/5/01
MW-1103M-MS/MSD	6/5/01
MW-1103S	6/6/01
MW-1104S	6/6/01
MW-1102S	6/6/01
MW-1101S	6/11/01
MW-1100S	6/11/01
MW-1108S	6/12/01
MW-513D	6/12/01
MW-508D	6/12/01
MW-504D	6/13/01
MW-502S	6/14/01
MW-514D	6/14/01
MW-515D	6/14/01
MW-515D-DUP.	6/14/01
MW-401	6/15/01
MW-126	6/15/01
MW-522	6/17/01
MW-521	6/18/01
MW-1109	6/19/01
MW-1109-MS/MSD	6/19/01
MW-517D	6/19/01
MW-501	6/19/01
MW-402	6/19/01
MW-123	6/20/01
MW-516D	6/20/01
MW-516D-DUP.	6/20/01
MW-500D	6/21/01
MW-101	6/21/01
MW-120	6/21-22/01

PHOTOGRAPHIC LOG

Project Name: Lockformer Site

Location: Lisle, Illinois

Date: June 5, 2001

Taken By: D. McGowan

Direction Looking: South

Notes: Clayton decontaminating bladder sampling pump at MW-1103M

Project Name: Lockformer Site

Location Lisle, Illinois

Date: June 12, 2001

Taken By: K. Carlisle

Direction Looking: Southwest

Notes: Flow through cell with water quality meter and flow-through cell set up at MW-1102D.

PHOTOGRAPHIC LOG

Project Name: Lockformer Site

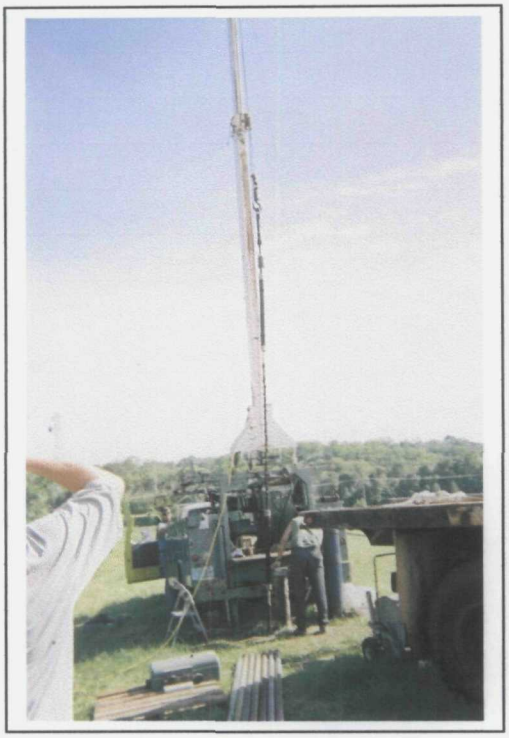
Location Lisle, Illinois

Date: June 12, 2001

Taken By: K. Carlisle

Direction Looking: South

Notes: Photo showing double packer apparatus at MW-1102.



Project Name: Lockformer Site

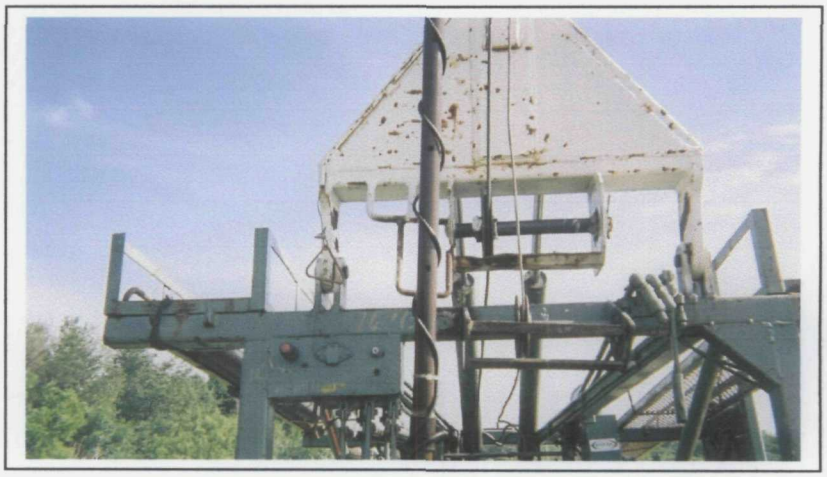
Location Lisle, Illinois

Date: June 12, 2001

Taken By: K. Carlisle

Direction Looking: South

Notes: Photo showing the double packer and screen. The black hose is the nitrogen gas line that inflates the packers.



PHOTOGRAPHIC LOG

Project Name: Lockformer Site

Location: Lisle, Illinois

Date: June 12, 2001

Taken By: K. Carlisle

Direction Looking: North

Notes: Clayton collecting a water sample from MW-508D.